

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) A method of determining the pressure of a gas within an engine relative to a pre-defined pressure of the gas, comprising the steps of:

(a) measuring the power factor of electricity generated by the engine;

(b) comparing the measured power factor with a power factor determined to correspond to the power factor of electricity generated by the engine when operating at the pre-defined pressure; and

(c) determining whether the measured power factor is less than the determined power factor.

2. (Original) A method of operating an engine containing a working gas comprising the steps of:

(a) measuring repeatedly the power factor of electricity generated by the engine when running;

(b) comparing measured power factors to a pre-defined power factor determined to correspond to the power factor of electricity generated by the engine when operating such that the working gas within the engine is at a pre-defined pressure; and

(c) producing an alarm when a measured power factor is found to be less than the determined power factor.

3. (Original) A method of operating a Stirling engine according to claim 2.

4. (Original) A method of operating a Stirling engine of a domestic combined heat and power unit according to claim 3.

5. (Previously Presented) A method according to claim 2 wherein the engine is connectable to an electrical grid and step (b) of the method comprises comparing power factors measured when the engine was isolated from the electrical grid.
6. (Original) A method according to claim 5, wherein step (b) of the method comprises comparing power factors measured during start-up of the engine.
7. (Previously Presented) A method according to claim 2, wherein step (b) comprises comparing the measured power factor with a pair of determined power factors and step (c) comprises producing an alarm if a measured power factor is found to be less than the higher of the determined power factors and shutting down the engine if a measured power factor is found to be less than the lower of the determined power factors.
8. (Previously Presented) A method according to claim 2, wherein the determined power factor or factors is/are determined empirically.
9. (Original) A method of operating an engine containing a working gas comprising the steps of:
 - (a) measuring repeatedly the power factor of electricity generated by the engine when running;
 - (b) storing the measured power factors;
 - (c) analysing at least some of the stored power factors to identify any variation across the power factors; and
 - (d) producing an alarm when a variation beyond an acceptable limit is identified.
10. (Original) The method of claim 9, further comprising shutting down the engine when the variation is beyond the acceptable limit.

11. (Original) The method of claim 9, further comprising distinguishing between a gradual variation and an abrupt variation, and providing an alarm when a gradual variation is identified and providing an alarm and shutting down the engine when an abrupt variation is identified.

12. (Original) An engine unit comprising:

an engine containing a working gas;

a power monitor operable to produce a power factor signal representative of the power factor of electricity generated by the engine;

control means configured to receive the power factor signal; and

an alarm;

wherein the control means is operable:

to use the power factor signal to determine whether the power factor of the engine is less than a pre-determined power factor that corresponds to the power factor of electricity generated by the engine running with the working gas at a pre-defined pressure; and

to operate the alarm if the power factor is determined to be less than the pre-determined power factor.

13. (Original) An engine unit comprising:

an engine containing a working gas;

a power monitor operable to produce a power factor signal representative of the power factor of electricity generated by the engine;

control means configured to receive the power factor signal; and

an alarm;

wherein the control means is operable:

to store the measured power factors;

to analyse at least some of the stored power factors to identify any variation across the power factors; and

to produce an alarm when a variation beyond an acceptable limit is identified.

14. (Currently Amended) A ~~computer~~ processor ~~when~~ programmed to perform the following steps:

to receive from a power monitor a power factor signal representative of a power factor of electricity generated by an engine containing a working gas;

to use the power factor signal to determine whether the power factor of the engine is less than a pre-determined power factor value stored in memory that corresponds to the power factor of electricity generated by the engine running with the working gas at a pre-defined pressure; and

to create an alarm if the power factor is determined to be less than the pre-determined power factor.

15. (Currently Amended) A ~~computer~~ processor ~~when~~ programmed to perform the following steps:

to receive repeatedly from a power monitor a power factor signal representative of a power factor of electricity generated by an engine containing a working gas;

to store the measured power factors in a memory;

to analyse at least some of the stored power factors to identify any variation across the power factors;

to compare any variation found with an acceptable limit stored in a memory; and

to create an alarm when the compared variation is found to exceed the acceptable limit.

16. (Currently Amended) A computer-readable medium encoded with a program comprising computer program instructions that, when loaded into a ~~computer~~ processor, cause it to operate as defined in claim 14.

17. (Canceled).

18. (Currently Amended) A computer-readable medium encoded with a program comprising computer program instructions that, when loaded into a ~~computer~~ processor, cause it to operate as defined in claim 15.

19. (Canceled).